An Analysis of Combat Service Support Doctrine for the Mechanized Infantry Division During Wide Frontage Operations

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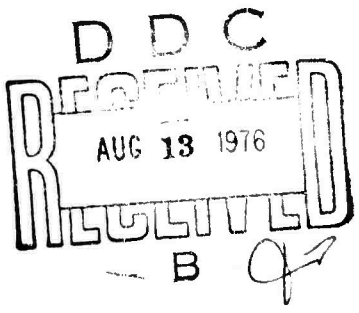

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ABSTRACT

A comparison of Soviet and U.S. forces in the NATO Center Region has necessitated the development of new tactical doctrine and training techniques to counter the numerical superiority of the Red forces, and the wide frontages occupied by U.S. divisions. Experience has shown that logistics doctrine must compliment and support the tactical concepts to successfully accomplish the combat mission.

This thesis attempts to determine if the existing doctrine is sufficient for the mechanized infantry division support command commander to establish responsive logistic support during wide frontage defensive operations.

The investigation is focused on an analysis of historical data, current published doctrine and an area of operations model. The dimensions used in the model are similar to those used in the scenario oriented recurring evaluation system model of Europe (SCORES).

Analysis indicates that a wide frontage operation will excessively strain the capability of the division support command using current doctrine. Existing logistics doctrine designed for conventional defensive tactics must be amended for a wide frontage defense situation.

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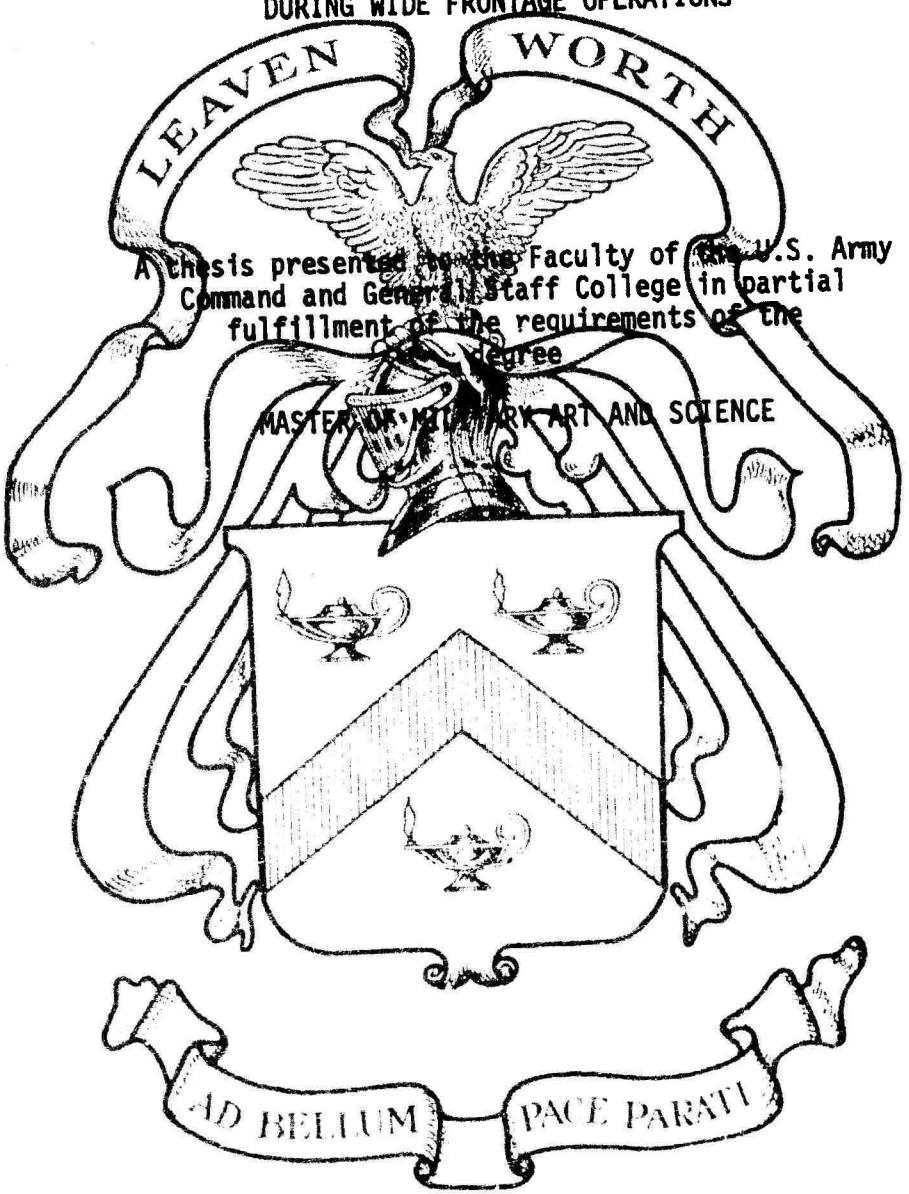

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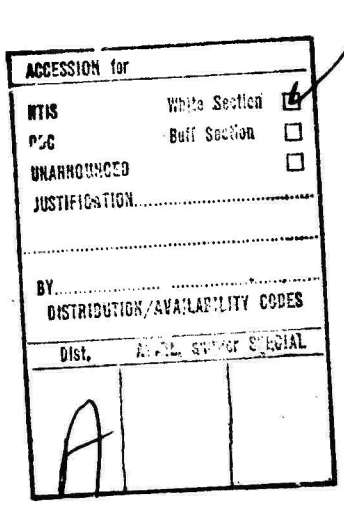

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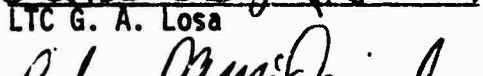
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The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

A comparison of Soviet and U.S. forces in the NATO Center Region has necessitated the development of new tactical doctrine and training techniques to counter the numerical superiority of the Red forces and the wide frontages occupied by U.S. divisions. Experience has shown that logistics doctrine must compliment and support the tactical concepts to successfully accomplish the combat mission.

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Chapter 1

INTRODUCTION

PREFACE

Although the United States Army has placed considerable effort on the improvement of tactical scenarios for modern warfare, little has been done doctrinally to assist the mechanized division support command commander in providing responsive logistics support in wide frontage operations. This thesis reviews, evaluates, draws conclusions and presents recommendations concerning the effectiveness of established doctrine for responsive logistics of the division support command during wide frontage operations.

BACKGROUND OF THE PROBLEM

The perceived threat to NATO as posed by the Warsaw Pact forces and particularly by the group of Soviet forces in Germany requires continual review of our capability to counter that threat. The capabilities of the Soviets were recently assessed by the former Secretary of Defense, James R. Schlesinger.

> The Soviet Union and the Peoples Republic of China (PRC) have proved to be relatively prudent powers under their current leadership, although some of their client states appear to suffer from periodic excesses of revolutionary exuberance. Challenges may therefore arise even though the great powers do not wish to initiate them. Whatever the case--and the future is clouded with uncertainty--there is no doubt about the very large military capabilities at the disposal of the U.S.S.R. What is more, these capabilities continue to grow. In our prices, the Soviets now devote more resources than the United States

> in most of the significant categories of defense. In overall research and development, they outstrip us by 20 per cent; in general purpose forces by 20 per cent; in procurement by 25 per cent; and in strategic nuclear offensive forces by 60 per cent.[1]

The threat posed by the Warsaw Pact was recently quantified by Mr. Dennis Chaplin, a researcher in military-political analysis, University of East Anglia, United Kingdom.

> In purely tabulated terms, the Warsaw Pact has a numerical superiority which NATO cannot afford to equal or surpass. Against NATO's immediately available 22 divisions (8 armored, 14 infantry and mechanized), the Warsaw Pact has 51 divisions (24 armored, 27 mechanized infantry). Although NATO divisions are larger, the overall manpower difference in favor of the Warsaw Pact is 260,000.[2]

A comparison of Soviet and U.S. forces in the NATO Center Region has necessitated the development of new tactical doctrine and training techniques to counter the numerical superiority of the Red forces. These new approaches are designed to improve combat effectiveness and thereby give our forces a greater probability of winning on the modern day battlefield, despite the wide frontages assigned to U.S. divisions as compared with historical sectors occupied by a U.S. division.

The requirement to develop new techniques for use on the field of battle was emphasized by Lieutenant General John H. Cushman in his opening day remarks to the 1976 Command and General Staff College class:

> Our personal and professional obligation is to do everyday what we must do, so that, when forces are engaged, these forces--battalions, and brigades, and divisions and joint task forces, and all of their components--are of the quality that our country expects and deserves--and that these forces and their staff and their support are ready, in the right mix, with their procedures in good order and practiced, so that they can go into action with dispatch and with minimum loss of life and resources, and can get the job done and, should it be war, can win the first battle and the next and the next, until the war is over.[3]

Innovative concepts to accomplish General Cushman's challenge to the CGSC class of 1976 are being developed at a rapid rate within the Army to insure that maximum mileage is gained from existing resources. A good example of a scenario oriented vehicle with which to test these concepts is the European version of the Scenario Oriented Recurring Evaluation System (SCORES), an explanation of which is contained in Chapter 2. European SCORES uses a wide frontage alignment of U.S. divisions. Although the majority of these new concepts, including SCORES wargames, have a significant impact on existing logistics support systems, too often logistics are not thoroughly considered in the drive to perfect tactics and command and control.

In the process of examining existing divisional combat service support doctrine and wide frontage operations in Europe, it will be shown that the demands on the division logistics system are incompatible with the current Division Support Command organization using doctrine in our current Army field manuals.

STATEMENT OF THE PROBLEM

This thesis analyzes the existing doctrinal literature and applies current tactical concepts to determine if there is sufficient guidance available to the mechanized infantry division support command commander to establish responsive combat service support in wide frontage operations.

QUESTIONS TO BE ANSWERED BY RESEARCH

As investigated and formulated for this thesis, the following questions are to be answered:

a. Does sufficient doctrinal guidance exist for the division support command commander to employ his forces during wide frontage operations?

b. What combat service support (CSS) concepts should be used during wide frontage operations?

c. What are some of the shortfalls and/or limitations of the Army's current divisional CSS doctrine/organization?

ASSUMPTIONS

Perceived threats by or from Soviet bloc countries will continue.

The organizational structure and resources of the mechanized infantry division support command will remain unchanged.

Fiscal and materiel resource availability within the Army will continue to be austere.

Forces will operate in a non-nuclear environment.

Air parity will exist.

SCOPE

This dissertation addresses selected key functional areas and units under the control of the division support command commander. These areas comprise: supply--class I (subsistence), class III (petroleum), and class V (ammunition); divisional field services

(clothing exchange and bath and graves registration); maintenance support services (recovery and evacuation, maintenance classification, repair parts supply, and equipment repair); and transportation, to include highway movement operations.

CHAPTER 1 FOOTNOTES

[1]Schlesinger, J. R., "The Nature of the Challenge," Commander's Digest, Volume 17, No. 19, 2-20 (February, 1975), p. 4.

[2]Chaplin, D., "NATO's Defense in Depth--Conundrum or Challenge?" Military Review, Volume LV, No. 12, December 1975, p. 4.

[3]Opening day remarks by LTG John H. Cushman in an address to the 1976 student body at USACGSC, Fort Leavenworth, Kansas, on 11 August 1975. Tapes are available in the USACGSC library.

Chapter 2

METHODOLOGY

The methodology used for this investigation is a combination of the historical and design oriented methods.

Chapter 3 is ar in-depth review of historical data and current published doctrinal literature pertaining to the mechanized infantry division combat service support. The division tactical area of operating responsibility is identified and explained. The functional areas of supply, maintenance, and transportation are examined to provide a doctrinal base for subsequent comparison. The content of the review includes the functions performed in the selected functional areas; a brief overview of the current organization; how the DISCOM units responsible for providing this support are disposed for combat on the battlefield; and the current operating concepts that depict how logistics operations within a specific functional area are conducted. The information contained in Chapter 3 provides a compendium of doctrine related to the selected functional areas.

Chapter 4 contains information about the area of operations model. The model is designed to provide a vehicle that will facilitate comparing and evaluating the current doctrinal guidance contained in Army publications against a realistic geographical area of operations. The model area of operations is similar in dimensions to the Scenario Oriented Recurring Evaluation System model of Europe (SCORES). In general terms, the European SCORES scenarios are wargaming techniques used to evaluate U.S. forces against the perceived threats of potential

enemy nations. The rationale for developing the model used in this thesis is based on a contrived threat posed against a U.S. mechanized infantry division and the requirements for this force to operate on a wide defensive front.

Chapter 5 contains the relevant considerations of the probable application of combat service support doctrine and how it should be applied in a wide frontage defensive situation using the dimensions of the battlefield contained in Chapter 4. Combat service support requirements and concepts are also identified and quantified.

Chapter 6, entitled "Summary, Conclusions, and Recommendations" contains a brief review of material covered in preceding chapters. The conclusions imply a degree of definitive commitment based on the findings of this investigation. The recommendations are practical and suggest specific courses of action to correct existing shortfalls in current doctrine. Some recommendations identify selected functional areas for additional research.

Chapter 3

REVIEW OF RELATED LITERATURE

INTRODUCTION

This chapter is an overview of historical data and current doctrinal literature pertaining to the mechanized infantry division combat service support. The division area of operations is reviewed and selected functional areas of supply, maintenance, and transportation are examined. The results of this examination are germane to this thesis as the data contained herein will serve as a basis for comparison when evaluating the adequacy of current doctrine for wide frontage operations.

PART ONE - ORGANIZATION OF THE DIVISION SECTOR

The geographical area of operations in which a mechanized infantry division can expect to function during a defensive operation is subdivided into two separate and distinct areas. Figure 3-1 depicts a doctrinal division area of operations. The division's tactical area of operating responsibility is divided into the brigade area or main battle area, and the division rear area. Segments of the division rear area and the brigade area, when CSS functions are conducted, are referred to as the trains areas.[1] (Figure 3-2 depicts the trains concepts.) The following is a definition of the trains:[2]

> A service force or group of service elements which provide logistic support...the vehicles and operating personnel which furnish supply, evacuation, and maintenance services to a land unit.

Located within the brigade area is the battalion trains area. It is divided into a field and combat trains. The combat trains are

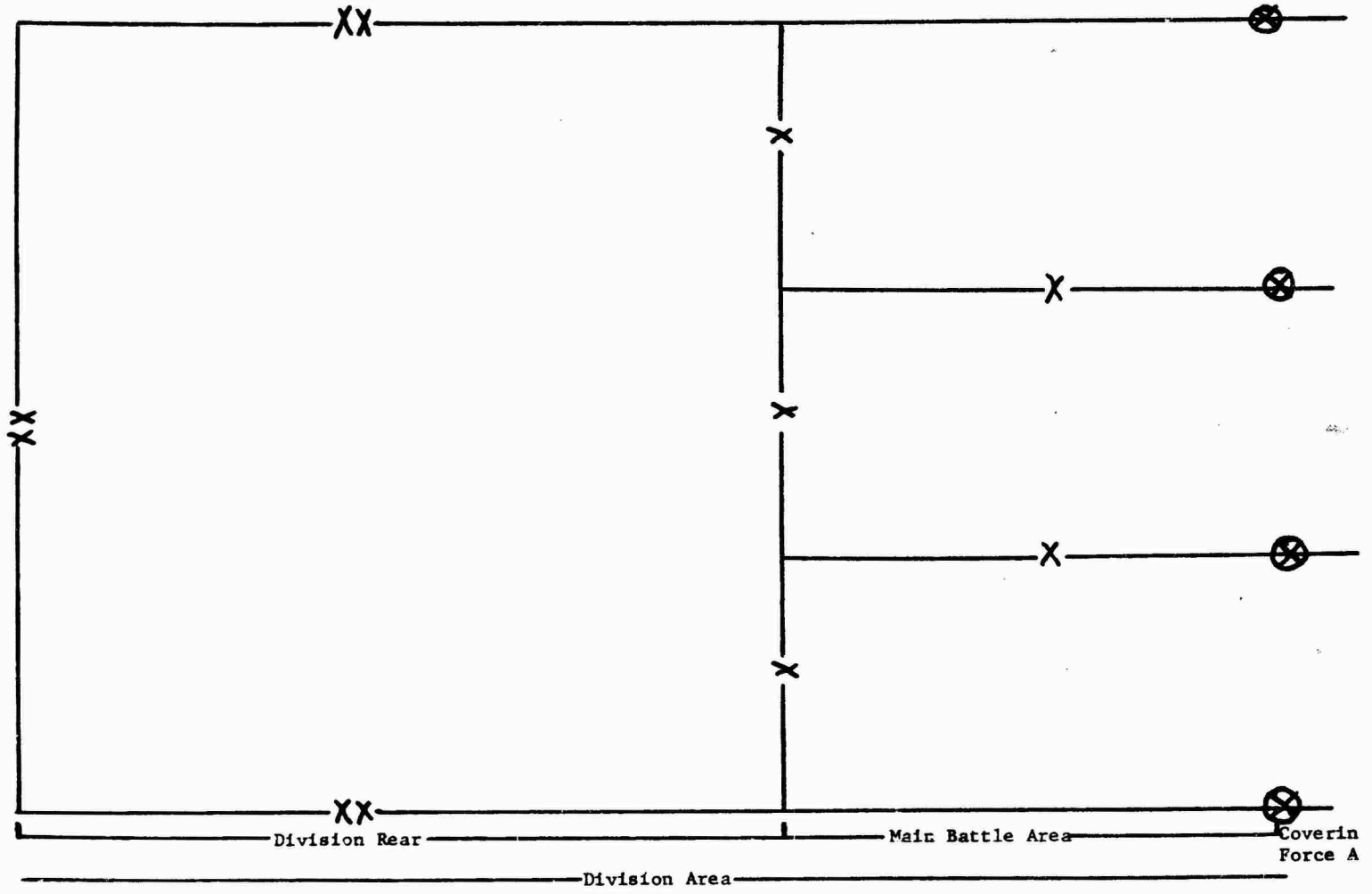

Figure 3-1 Division Area of Operations

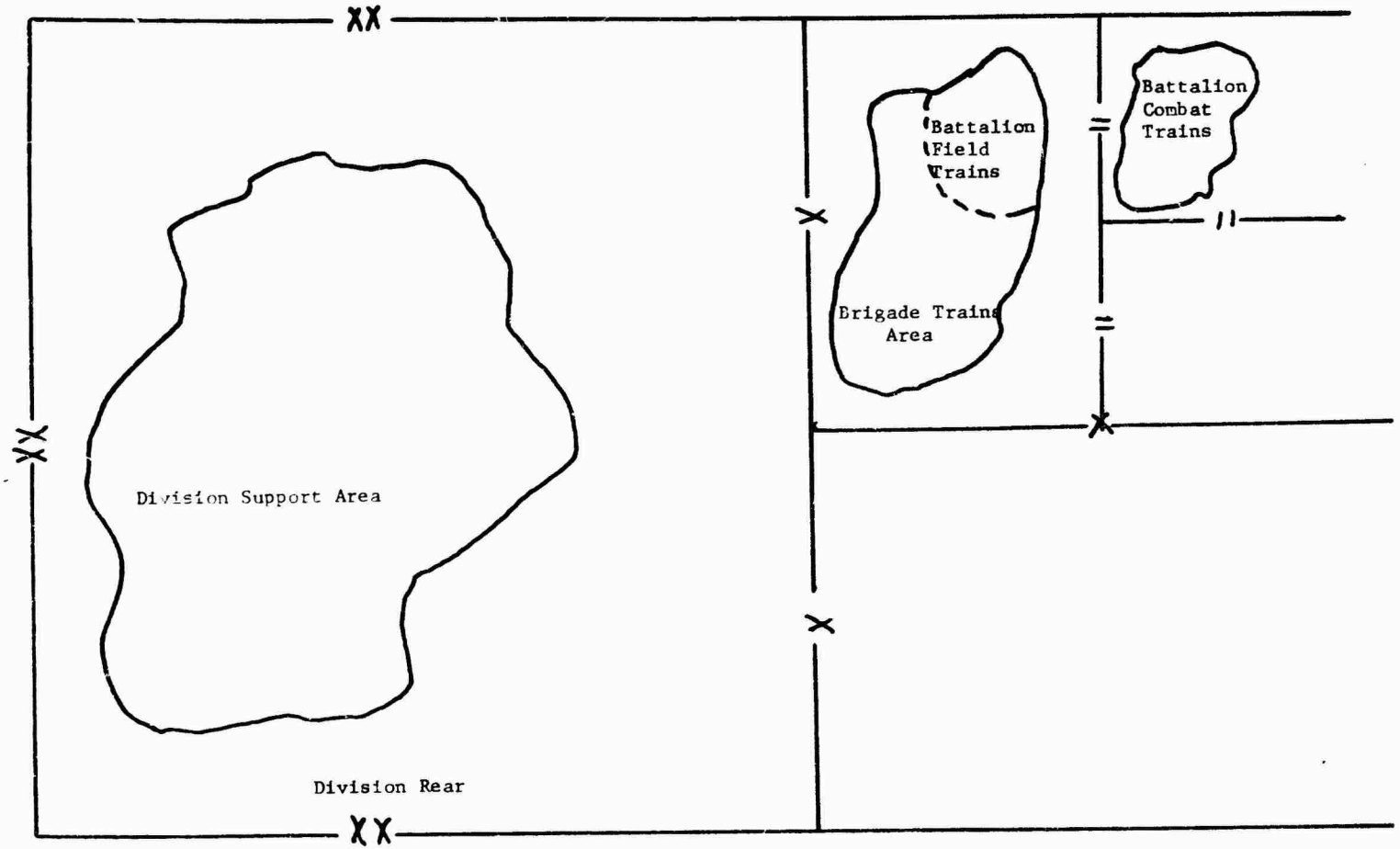

Figure 3-2 Trains Areas

located forward so as to influence the combat service support to the combat battalion. The field trains are normally located within the rearward portion of the brigade area identified as the brigade trains area.[3] Normally, in defensive operations, trains combat service support activities/areas are located farther to the rear than in offensive operations to avoid congestion on forward road networks and interference with tactical operations.[4]

The brigade trains areas contain the majority of the division support command units deployed forward providing one-stop direct support service to division customers located in the brigade area.

The division support area is a geographical area within the division rear area. The division rear area is that portion between the brigade rear boundary and the division rear boundary. Division support command units located in the division support area provide direct support logistics support to the remaining units of the division and assigned/attached units located within the division rear area.

A portion of the useable road network within the division area is normally designated as division main supply routes. The division main supply route connects with the corps main supply route at the division rear boundary and extends forward to the brigade trains area or the brigade rear boundary, whichever is farther forward.[5] Division main supply routes are used primarily for the movement of logistics support for the division.

PART TWO - SUPPLY AND SERVICES

The functions of supply and services in a mechanized infantry division are the responsibility of the Supply and Service Company of the Supply and Transport Battalion.

Elements of the Supply and Service Company provide division users with classes I, II, III, IV, VI and VII supplies.[6] Distribution points for these supplies are established by elements of the Supply and Service Company in the division support area and in the brigade trains area. Organic units of the division are responsible for class V resupply using the supply point method of distribution. Division units using organic vehicles will proceed to the nearest corps ammunition supply point (ASP) to obtain the required class V. The corps ASP is normally located to the rear of the division's rear boundary; however, it can be located forward in the division area of operations, depending on the tactical situation. Additionally, the division maintains a quantity of selected supplies (excess to daily requirements) in reserve.[7] Reserve stocks are normally located in the division support area and provide for uninterrupted resupply should a contingency occur. The Supply and Service Company is also responsible for providing service support to division users. The type services include, but are not limited to, clothing exchange, bath, and graves registration. During peacetime, these services are normally provided by the post, camp or station. In a combat situation the Supply and Service Company is augmented with cellular type units to accomplish the clothing exchange, bath and graves registration missions. The organization of the Supply and Service Company is depicted in figure 3-3.

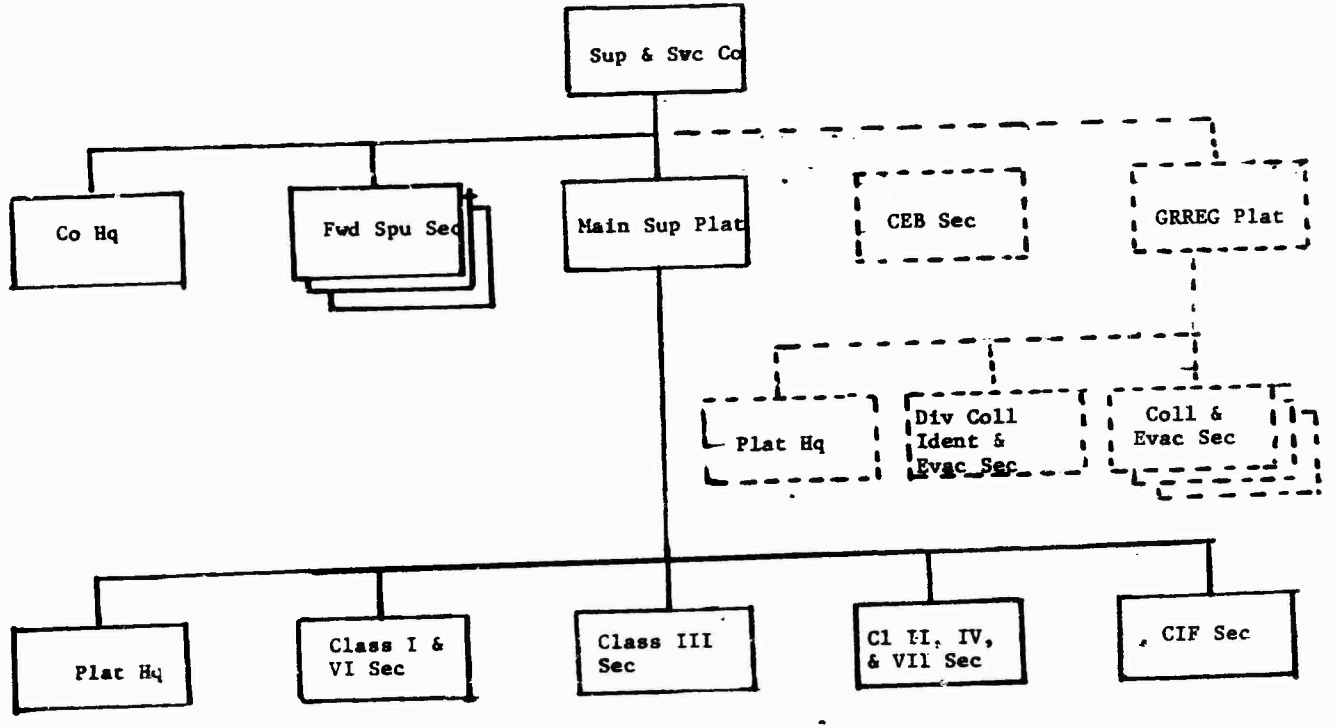

Figure 3-3. SUPPLY AND SERVICE COMPANY, SUPPLY AND TRANSPORT BATTALION, INFANTRY DIVISION (MECHANIZED)

(Source: TOE 10-7H)

Elements of the Supply and Service Company are deployed throughout the division area of operations to enhance logistic responsiveness to division customers. The main supply platoon is normally located in the division support area and provides direct support supply support to assigned and attached units of the division operating in the division rear area. The forward supply sections are deployed in support of each brigade and normally operate in the brigade trains area. Each forward supply section provides complete supply and service support to units assigned or attached to the brigade or operating in the brigade area.

The clothing exchange, bath, and graves registration sections are organized for employment in all geographical areas of the division. Normally, these service-type activities are deployed in the division support area and the brigade trains areas, and provide service support on an area basis. The graves registration service provided to the brigades is primarily collection; however, the graves registration activity in the division support area has the additional responsibility of formal identification of remains.

Division level supply support does not ignore the importance of interdependence on the other functional areas of the logistic system or the current concepts and requirements for responsive resupply.[8] The Direct Support System, or DSS as it is commonly known, is the standard Army supply distribution system. The objectives of DSS as explained in detail in Field Manual 38-725 are:[9]

(1) Improve management and stockage of fast moving items.
(2) Reduce supply pipeline and on-hand inventories.
(3) Provide asset visibility and intransit control.
(4) Improve supply responsiveness.
(5) Maintain materiel readiness.

Division supply support is based on the objectives of DSS. Supplies for division consumption, less classes V and VIII, are normally received from corps using corps transportation. These supplies are transported as far forward into the division area of operations as practical, using the throughput movement concept. The bulk of division supplies are usually received by the main supply platoon in the division support area; however, it is within the capability of the logistics system to deliver supplies to the forward supply sections located in the brigade trains areas. Requirements for resupply within the division support area or the brigade trains areas can be accomplished by either supply point or unit distribution. The tactical situation, distance, and asset availability will dictate the method of distribution.

The total daily resupply requirement of all classes of supply for a mechanized infantry division conducting defensive operations is 1,980 short tons. A portion of this total requirement (742 short tons) will be the responsibility of the Supply and Service Company for distribution to division customers. The remainder will be handled by other division support command units and, in the case of ammunition, it will be moved and distributed by organic unit vehicles.

PART THREE - MAINTENANCE

Maintenance support is provided to all assigned and attached units of the division by the organic maintenance battalion. The scope of the maintenance mission includes direct support maintenance for all authorized equipment in the division except: medical materiel, cryptographic equipment, ammunition and electrical accounting machines/automatic data

processing equipment. The maintenance battalion also provides technical assistance to all division customers, repair parts support, maintains an operational readiness float of selected items of division equipment, limited vehicular recovery assistance, direct exchange service for selected items, and operates maintenance collecting points within the division area of operations.[10]

The maintenance battalion is also responsible for operating a quick supply store (QSS) that furnishes selected class IX repair parts to division units on a free issue basis. In general terms, QSS items are supported by demands from division users and cost less than five dollars per unit of issue.[11]

The organization of the maintenance battalion is shown in figure 3-4.

The Headquarters and Light Maintenance Company is responsible for providing electronics maintenance to all units located in the division rear area and repair parts supply for all units of the division. The electronic maintenance mission excludes communications security and missile system type equipment. The Headquarters and Light Maintenance Company is normally located in the division support area; however, the unit is structured to provide limited contact teams in support of brigades or other units.

The Heavy Maintenance Company is responsible for providing direct support maintenance for armament, mechanical, quartermaster and engineer type equipment for division units not supported by one of the forward support companies. It also provides chemical and refrigeration maintenance and the operational readiness float to all units of the division.

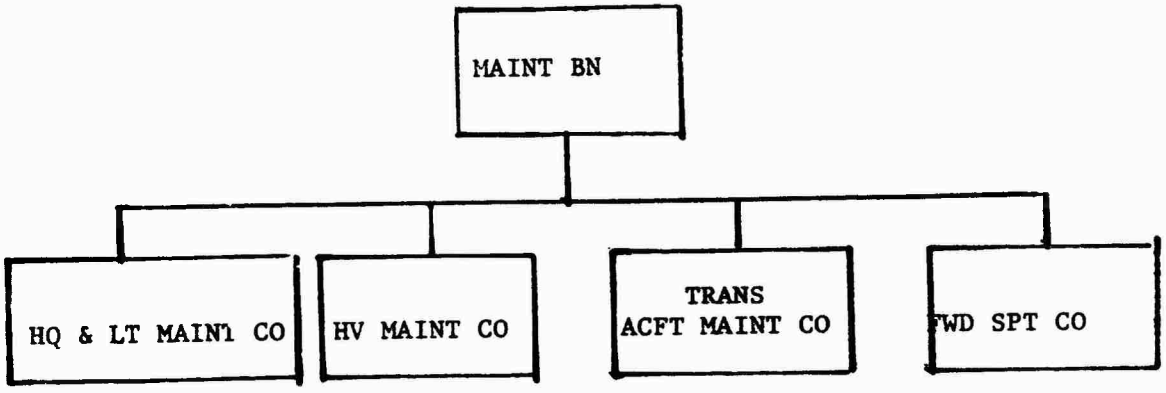

Figure 3-4. MAINTENANCE BATTALION, INFANTRY (MECHANIZED), AND ARMORED DIVISIONS (SOURCE: TOE 29-25H)

The Heavy Maintenance Company is normally located in the division support area; however, it can provide backup support to the forward support companies and limited vehicular recovery support to division users, as required.

There are three Forward Support Companies organic to the maintenance battalion. Each company is normally placed in support of each brigade, regardless of location within the division area of operations. The Forward Support Company is a composite-type direct support unit providing one-stop maintenance support. The Forward Support Company possesses a degree of expertise and capability identical to that of the Headquarters and Light and Heavy Maintenance Companies. The repair parts stocked by the Forward Maintenance Company are provided by the Headquarters and Light Maintenance Company.

The Transportation Aircraft Maintenance Company is responsible for providing direct support maintenance for all authorized division aircraft and avionics equipment to include aircraft-peculiar repair parts. This unit is normally located in the division rear area near the division airfield. The company can operate from more than one location for limited periods, and has the capability to provide contact repair teams throughout the division area of operations for on-site repair, as necessary.

The Missile Support Company is a new addition to the organic capability of the maintenance battalion. The initial Table of Organization and Equipment was published 1 September 1975. Heretofore, missile maintenance was furnished by augmentation units on an as-required basis. This company is responsible for providing "...system peculiar direct support maintenance and repair parts support for light air defense systems, their supporting radars, and land combat missile systems."[12]

The missile support company will normally operate from the division support area; however, contact teams may be attached to units of the division with high missile densities.

By definition, maintenance consists of those resources required to maintain equipment or keep it in a serviceable condition.[13] In division operations, maintenance is performed throughout the division area of operations. Direct support maintenance, to include repair parts supply, is normally performed in the brigade trains areas and in the division support area. When requirements for repair exceed the capability of the maintenance battalion, the materiel is evacuated to general support units of the corps for further disposition.

PART FOUR - TRANSPORTATION

Direct support transportation service in a mechanized infantry division is provided by the Transportation Motor Transport Company of the Supply and Transportation Battalion. The transportation mission of this battalion is to:

> ...provide transportation for unit distribution of all classes of supply except class V (ammunition), to transport the division reserve supplies for which it is responsible, to furnish vehicles required to displace division headquarters and the division administrative company, and to supplement the transport means available to other elements of the division.[14]

The organization of the Transportation Motor Transport Company is shown in figure 3-5.

This unit is normally located in the division support area; however, elements are constantly moving supplies and personnel to the forward brigade areas and evacuating captured equipment, prisoners of war, and salvage materiel to the rear.

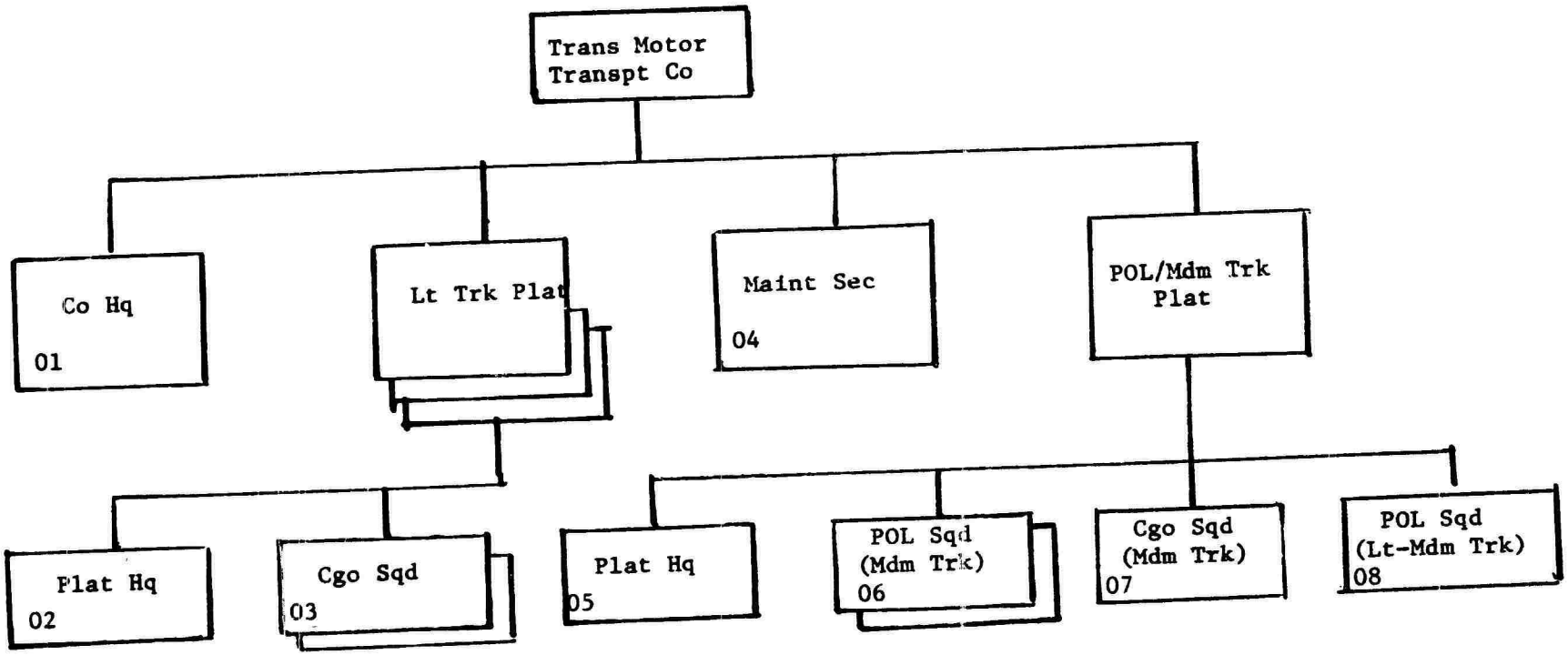

Figure 3-5. TRANSPORTATION MOTOR TRANSPORT COMPANY
SUPPLY AND TRANSPORT BATTALION, INFANTRY DIVISION (MECHANIZED)
(Source: TOE 55-84H)

The division transportation officer (DTO) is a special staff officer on the division staff who provides the division commander and the Supply and Transport Battalion commander with advice and assistance on transportation matters. He also serves as an interface with the Transportation Motor Transport Company and higher echelons of transportation resources outside the division. The DTO coordinates with the division G3 on tactical troop movements and with the division G4 on logistical and administrative transport matters. He implements the division movement control function and regulates the vehicular traffic into, within, and out of the division area.[15]

The priorities for the use of division transportation assets are established by the general staff. This data is provided to the division support command and, subsequently, to the Supply and Transportation Battalion commander. A comparison of assets versus requirements is made and transportation resources are committed.

The flow of transportation support from the Transportation Motor Transport Company may vary depending on the specific standing operating procedure of the division involved. In the case of brigade operations, requests flow from combat battalions to the brigade S4 section. If the brigade has resources available, the request can be satisfied at this level. If the requirement exceeds the capability of the brigade, it is then passed to DISCOM movements office, Headquarters and Headquarters Company of the DISCOM, who commits the assets of the Transportation Motor Transport Company. If the requirement cannot be satisfied at this level, it will be passed to the division transportation officer for transportation resources from outside the division.

Divisional units other than those assigned or attached to the brigade submit their requests for transportation directly to the DISCOM movements office of the Headquarters and Headquarters Company, DISCOM. If the request cannot be satisfied at this level, it is passed to the division transportation officer as in the case of a brigade request.

In accordance with the capabilities of the current Table of Organization and Equipment 55-84H, the Transportation Motor Transport Company can transport in a single lift 270 short tons of materiel.[16] This tonnage figure is based on 75 percent vehicle availability. Weight alone is not the determining factor for transportation requirements determination. The cube of materiel to be transported is also an important factor for planning purposes. Other physical factors which are considered in transportation planning are the surface capability of the road network, time, distance, and terrain.

A current concept used in transportation operations is the maximum use of throughput distribution. This is evident in division operations where transportation resources located in the division support area move materiel forward to battalion-sized units, bypassing the supply activities located in the brigade trains areas. The same concept is used to move supplies and personnel into the division area of operations from the corps rear area or COMMZ. The primary advantage of using the throughput distribution concept is the reduction of rehandling and transshipping of cargo. This results in more efficient and cost effective use of available combat service support resources.

CHAPTER 3 FOOTNOTES

[1]Department of the Army Field Manual 54-2, The Division Support Command and Separate Brigade Support Battalion, 1969, p. 2-8.

[2]Department of Defense Joint Chiefs of Staff Publication 1. Dictionary of United States Military Terms for Joint Usage, 1973, p. 306.

[3]United States Army Command and General Staff College Reference Book 101-2, Combat Service Support, 1975, p. 2-10.

[4]Department of the Army Field Manual 61-100, The Division, 1968, p. 7-15.

[5]USACGSC Reference Book 101-2, p. B-7.

[6]Department of the Army Field Manual 54-2, The Division Support Command and Separate Brigade Support Battalion, 1974, p. 3-27.

[7]Department of the Army Regulation 310-25, Dictionary of United States Army Terms, 1 June 1972, p. 447.

[8]Department of the Army Regulation 11-8, Principles and Policies of the Army Logistics System, 1974. p. 3-0.

[9]Department of the Army Field Manual (Draft) 38-725-1, Direct Support System, undated, p. 1-1.

[10]Department of the Army Field Manual 29-30-1, Division Maintenance Battalion, 1976, p. 2-3.

[11]Department of the Army Regulation 710-2, Materiel Management for Using Units, Support Units, and Installations, 1971, p. 3-45.

[12]Department of the Army Table of Organization and Equipment 9-557H, Missile Support Company, 1975, p. I-03.

[13]Department of the Army Regulation 750-1, Army Materiel Maintenance Concepts and Policies, 1972, p. A-4.

[14]Department of the Army Field Manual 55-31, Army Motor Transport Unit, 1972, p. 4-1.

[15]Ibid., p. 4-3.

[16]Department of the Army Table of Organization and Equipment 55-84H, Transportation Motor Transport Company, change 8, 1974, p. I-1.

Chapter 4

AREA OF OPERATIONS MODEL

The defensive scheme of maneuver employed on the modern battlefield cannot be accurately predetermined. Commanders will adopt defensive actions based primarily on such factors as the mission, terrain, enemy, and friendly forces available. Flexibility is paramount not only to the tactical confrontation but to logistics support as well. Logistic forces must be capable of supporting from any base arrangement.

Division combat service support units must be located forward to provide the optimum in responsive logistics support.[1] In the past, equipment repair, major transportation operations, and critical supply operations were accomplished in areas rearward of the division rear boundary.

Because of the nature of high intensity conflicts, enemy forces can be expected to employ the most modern weapons systems and all the available resources in the functional areas of combat service support, intelligence, communications, firepower, mobility, and command and control.[2] United States forces can expect that--

> 60 percent of all force maneuver echelons and all fire support means engaged in all-out combat demanding total strength application over a period of time to include possible commitment of next higher echelon resources to assure accomplishment of the friendly force mission.[3]

The possibility of nuclear warfare on the European battlefield requires further assessment and examination which is a subject beyond the scope of this investigation. The feasibility of non-nuclear

warfare in Europe was described and somewhat quantified by former Secretary of Defense, James R. Schlesinger:

> In an age of essential nuclear parity, few of us would be happy with a concept for the defense of Western Europe that was heavily dependent on an early recourse to nuclear weapons. Most of us would agree, once having looked at the facts, that a non-nuclear defense of Western Europe is feasible. It also is desirable, from the standpoint of deterrence, that such a defense should be backed up and reinforced at all times by theater nuclear forces.[4]

The position of nuclear or non-nuclear warfare as it pertains to Western Europe has been debated by western strategic theorists based on statements contained in Soviet policy statements and military writings. Some theorists believe that the Soviets are uncertain about NATO's nuclear intentions which in turn may be the reason for support to both sides of the European nuclear warfare concept. In a recent article in the Military Review, the following Soviet viewpoint was identified:

> The Soviet leadership now sees a decreased chance of nuclear warfare if a conflict should occur in Europe. This view is based on Soviet calculation that the United States and the rest of NATO may be deterred from the use of nuclear weapons. Over the last decade, Soviet confidence in their deterrent posture increased as they approached and gained strategic nuclear parity with the United States.[5]

This investigation will use the non-nuclear warfare concept for the defense of Western Europe, and the inherent battlefield characteristics thereof will be included in the Area of Operations Model.

Because of our current tactical concepts, specific rules of thumb are no longer used as a guide in determining the dimensions of the modern battlefield. Previously, the division defensive area of operations measured approximately 18 to 21 km in width and 30 km in depth, and the distance from the division support area to the brigade trains areas was approximately 30 km. The actual dimensions for wide frontage defensive

operations are unpredictable, and dependent on the threat, force structure, mission and terrain. In order to provide a vehicle by which a comparison can be evaluated, the dimension of the division area of operations for this investigation is 45 to 55 km wide by 70-80 km in depth. This model is in consonance with some of the doctrinal concepts being developed and evaluated by the Command and General Staff College (USACGSC). The scenario for Defense Conference III, USACGSC, portrayed a division area of operations measuring 62 km wide by 55 km in depth.[6]

During a wide frontage defensive situation, the division would be expected to deploy all three brigades in the forward portion of the forward defensive area, maintaining a relatively small reserve of not more than two battalions. Deploying the brigades in this manner does not mean that each brigade would be defending a sector of equal size. There may be varied options available to the division commander when selecting defensive positions. Natural terrain may restrict the occupation of the entire area. Timely and reliable intelligence may indicate the most likely avenue of enemy attack which in turn would enable the division commander to concentrate his forces at that particular place. Regardless of the above options, the distances involved for support of the brigades by DISCOM units will be approximately the same. The trains concept for support of a formation of three brigades abreast is shown in figure 4-1.

It is envisioned the Division Commander would be given the defensive mission of defend in sector. This type of mission translates as follows:

> A mission, normally nonrestrictive in nature, that requires a defending unit to destroy, contain, or force the withdrawal of an attacker anywhere forward of the defending

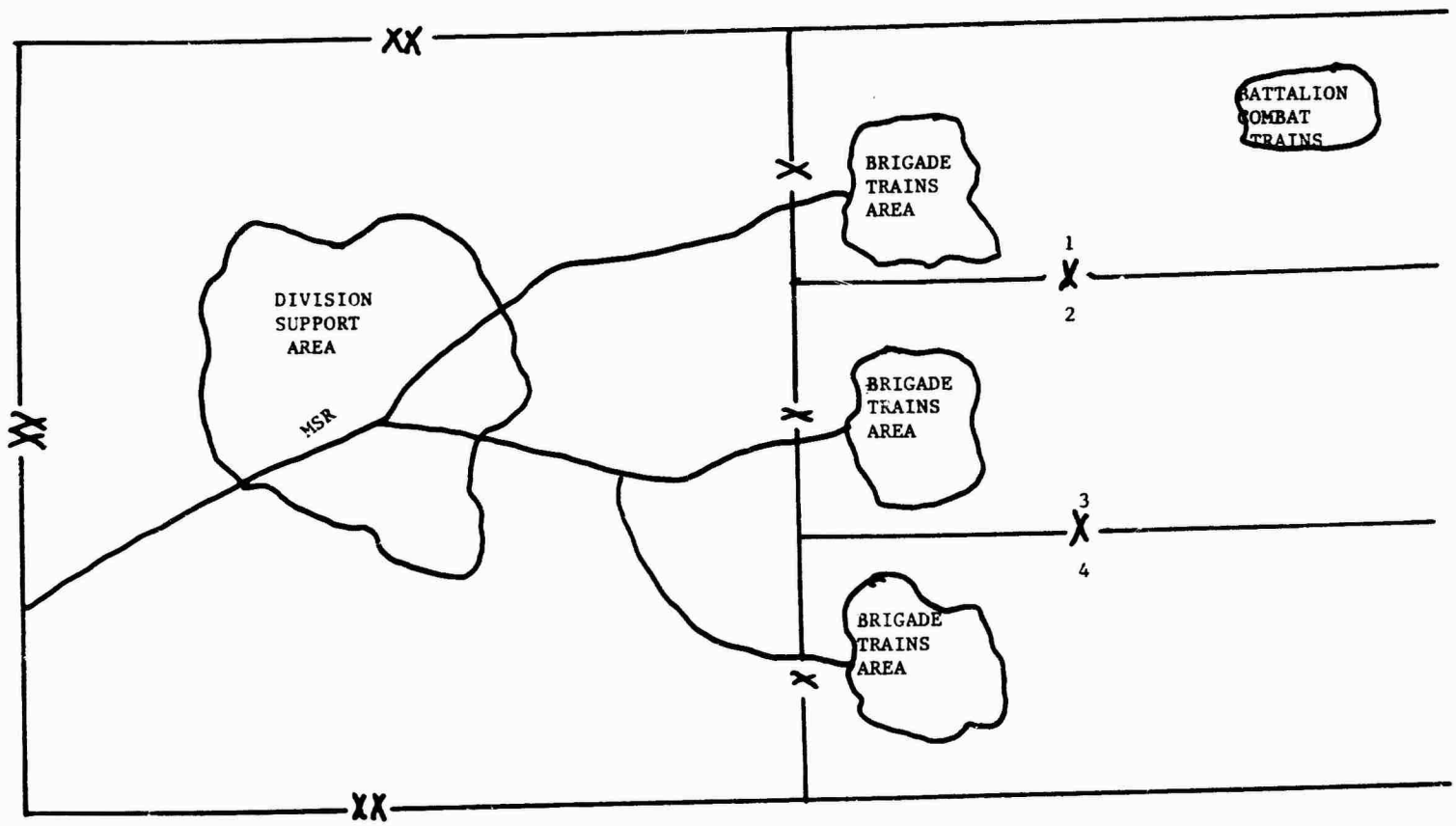

FIGURE 4-1 TRAINS AREA

> unit's rear boundary. The mission may become restrictive if directed to retain a specific line, locale, zone, or terrain feature.[7]

On receipt of the defensive mission the division commander would organize his forces and assign his mission in three areas: the covering force area, the main battle area, and the rear area.[8]

CHAPTER 4 FOOTNOTES

[1]United States Army Field Manual 100-5 (draft), Operations, 15 December 1975, p. 10-5.

[2]Department of the Army, Headquarters United States Army Training and Doctrine Command, Standardization of Terminology, 10 October 1975, p. 1.

[3]Ibid., p. 2.

[4]Department of Defense, Commanders Digest, "The Nature of the Challenge," James R. Schlesinger, 27 February 1975, p. 15.

[5]Military Review, "Conventional Warfare in Europe--The Soviet View," Dallas C. Brown, February 1975, pp. 58-59.

[6]Department of the Army, United States Army Command and General Staff College, Letter, "Defense Conference III," December 1974.

[7]Headquarters United States Army Command and General Staff College, The Common Language of Tactics, July 1975, p. 9.

[8]United States Army Field Manual (draft) 100-5, Operations, 15 December 1975, p. 5-12.

Chapter 5

COMBAT SERVICE SUPPORT ON THE WIDE FRONTAGE BATTLEFIELD

INTRODUCTION

This chapter contains the relevant combat service support considerations pertaining to wide frontage defensive operations. The information contained herein is a discussion of the probable application of combat service support on a wide frontage battlefield using the wide frontage battle dimensions described in Chapter 4. The requirements for combat service support units and activities to operate over increased distances will necessitate the identification of specific tasks to be performed, a type task organization to be supported, projected consumption rates and workload data to include adherence to viable combat service support concepts to accomplish the defensive mission.

These considerations and factors will be examined in detail in this chapter.

PART ONE - GENERAL

The dimensions of the division area of operations in a wide frontage defensive posture is approximately 55 kilometers in width by 80 kilometers in depth. The main supply routes extending from the division rear boundary to the brigade trains area, for planning purposes, can be expected to be an average of 100 kilometers in length. From the division support area to the brigade trains area is approximately 80 kilometers. This figure is based on reasonable road networks similar to those found in the majority of western Europe and good trafficability.

Conditions contrary to these described above will result in extended distances and would increase the travel time considerably.

Normally, the combat service support units and activities are located farther to the rear in defensive operations as opposed to offensive operations.[1] However, because of the characteristics of wide frontage operations, it is envisioned that combat service support elements would be located farther forward than normal because of the increased distances involved. By operating from a forward position, combat service support functions will be more responsive and can influence the outcome of the combat mission. There is an inherent risk in locating combat service support forward in the rear portion of the main battle area; however, with the enemy's perceived numerical superiority and the criticality of defensive operations on a wide front, this risk must be accepted.

Normally the defense of a given sector will also include a covering force mission. Units from the division, corps forces, or a combination of both may be used as a covering force.[2] The purpose of the covering force is to develop the situation early, provide security for the main body, or to provide time for the delaying of the main body force.[3] Usually the covering force will operate beyond the main battle area of the division. In this type situation, the requirements on combat service support units of the division are greatly increased. For the purposes of this examination, the covering force mission and the inherent combat service support requirements thereof are not addressed, because this type support will most probably be provided by corps.

PART TWO - SUPPLY AND SERVICES OPERATIONS

In wide frontage defensive operations, subordinate elements of the Supply and Transport Battalion will be employed in the support areas identified in Part Two of Chapter 3. If other units of significant size are assigned or attached to the division during wide frontage operations, additional supply and service support will have to be provided by COSCOM support units. Because of the criticality of responsive supply and service support, functional elements of the main supply platoon, normally located in the division support area, can be positioned forward to augment the forward supply detachments operating in the brigade trains areas. This shift in task organization of the Supply and Transport Battalion will be necessary to handle the increased consumption that can be anticipated during defensive operations.

Based on the consumption planning data contained in FM 101-10-1, to be published in the summer of 1976, the consumption rate for supplies by class for defensive operations are identified in table 5-1. This data accommodates new tactical concepts and reflects increased consumption rates. The figures are expressed in short tons and were computed by using the pounds per man per day method with the exception of class V. Table 3-27 of FM 101-10-1 identifies specific class V requirements for a given type of combat. The first day expenditure rate for a mechanized infantry division in defense of a position is 1920 short tons. Succeeding days' expenditure rates are 1163 short tons. By taking an average over a ten-day period the daily class V expenditure rate will be 1238.7 short tons.[4] Because ammunition is a commodity that allows the projection of combat power coupled with the fact that class V supplies are absolutely

Division Consumption Rates[5]

Class of Supply	Daily Requirement (STON)
I	51.8
II	27.3
III Bulk	514.3
III Package	12.6
IV	71.2
V	1238.7
VI	15.6
VII	35.8
IX	12.8
	1980.1 STON

Table 5-1

essential to the success of the defensive mission, the daily consumption rate of 1238.7 short tons should be used for class V in a wide frontage defensive situation. By using the pounds per man per day method for the computation of class V supplies, the total requirement would be 263.3[6] short tons a day for the entire division. This planning figure is considered to be acceptable for planning in general and in the absence of more detailed information.

In order to accurately assess and quantify the total requirements for support of wide frontage defensive operations, it is paramount to identify the task organization of the division and to further identify the troop population by support areas where DISCOM units and activities are located. Table 5-2 shows a type task organization by support area location, which serves as a basis for further requirements computation. It should be noted that the assigned and attached units that would normally be in support of the division are not included. Attachment of additional combat and combat support units normally depends on such factors as specific mission or terrain, or enemy threat, which is beyond the scope of this investigation.

Additionally, any assignment or attachment of units to the division would increase combat service support requirements. Based on the division population in each support area, the consumption of supplies for this force can be quantified. Table 5-3 identifies the short ton requirement for supplies, by class, by support area.

Because of the distances involved from the brigade trains to the users in wide frontage operations, the use of pre-stockage points forward in the brigade areas will significantly enhance supply responsiveness.

Division Population by Support Area

Unit	DSA	1st Bde	2d Bde	3d Bde	Div Rear Area
HHC - Div					188
Signal Bn	192	48	48	48	321
Brigade HHC		354	354	354	
Cav Sqdn					876
DISCOM	1,988	273	273	273	
Div Avn Co					97
MP Co	31	31	31	31	67
Engr Bn	209	155	155	155	310
Div Arty		583	583	583	756
ADA Bn	122	108	108	122	98
Mech Bns		1,752	1,752	1,752	
Tank Bns		552	552	552	552
	1,988	3,856	3,856	3,870	3,265

Table 5-2

(Source: FM 101-10-1, Unit TOE's)

Consumption by Support Area - S/T Per Day

Class	Support Area Locations				
	DSA	1st Bde	2d Bde	3d Bde	Div Rear Area
I	6.1	11.9	11.9	12.0	10.0
II	3.2	6.3	6.3	6.3	5.3
III Bulk	60.7	117.8	117.8	118.2	99.7
III Package	1.5	2.9	2.9	2.9	2.4
IV	8.4	16.3	16.3	16.4	13.8
V	146.2	283.6	283.6	284.6	240.1
VI	1.8	3.6	3.6	3.6	3.0
VII	4.2	8.2	8.2	8.2	6.9
IX	1.5	2.9	2.9	2.9	2.5
TOTALS (S/T)	233.6	453.5	453.5	455.1	383.2

Table 5-3

(Source: Consumption Rates, FM 101-10-1)

This concept should be mandatory for the stockpiling of ammunition and selected items of barrier material to support the defensive operation. The primary advantages to be gained from the pre-stocking of materiel is time, increased responsiveness, and the reduction of transportation requirements.

Most combat divisions are authorized reserve supplies which are "accumulated in excess of immediate needs for the purpose of insuring continuity of an adequate supply."[7] The division may be required to maintain a reserve of selected line items or classes of supply to support the defensive operation. Normally, the authorization for retention of reserve supplies can be established by the theater army commander. Reserve supplies normally consist of a small stock of fast-moving items, usually maintained in the division support area by the Main Supply Platoon. The quantity of supplies authorized to constitute the reserve may be expressed in terms of days of supply for a specific size force, or for the division as a whole. In wide frontage defensive operations, the division commander should provide specific guidance in advance so that the required reserve supplies can be obtained on a timely basis.

The services provided by the Supply and Transport Battalion are normally limited to bath, clothing exchange and graves registration. During wide frontage operations the division could use additional back-up direct support and general support services in the functional areas of laundry, bath, clothing exchange, and graves registration, usually available from COSCOM resources. Local contract type services of the host country, in the case of Western Europe, should be identified and used to the maximum extent possible. These types of services would include the procurement of subsistence items, petroleum transportation services,

line and local haul transportation services for the movement of general cargo, and contracting for facilities and utilities and local labor. The importance of contract services was best expressed by Lieutenant General Joseph M. Heiser, Jr., in his book on Vietnam Studies - Logistic Support, which stated:

> The variety and magnitude of the services provided U.S. and Free World Forces by contract augmented the logistic system very effectively. The successful techniques and procedures developed by U.S. Army Procurement Agency, Vietnam in providing these procurement services, in the combat zone, will be the basis for contract logistical support in future conflicts.[8]

The advantages of contractor operated services is apparent and every effort should be made to identify those types of services that could best be performed by contract.

PART THREE - MAINTENANCE OPERATIONS

In wide defensive operations, maintenance support will continue to be provided by the division Maintenance Battalion. Any assignment or attachment of additional units to the division will correspondingly increase the total maintenance workload based solely on densities of equipment to be supported, not to include the repair parts requirements. The units of the maintenance battalion will be physically located in the division area of operations as identified in Part Three, Chapter 3. The emphasis of maintenance support will be forward in the main battle area to enhance the success of the defensive mission. Contact teams of the Headquarters and Light Maintenance and Heavy Maintenance Companies in all functional areas of equipment maintenance will be required to deploy forward to provide backup direct support to the forward support companies located in the brigade trains areas. The requirement for maintenance

and repair being accomplished as far forward as possible was addressed by Major General Erwin M. Graham in a recent article in the Army Logistician magazine:

> Renewed emphasis is being placed on doing as much maintenance and repair as far forward as possible. The importance of this was highlighted by the accomplishments of the Israelis in the 1973 war. It has been said that they performed maintenance miracles on the battlefield. With limited resources we must learn to repair and return equipment to combat as rapidly as possible.9

The division should make maximum use of general support contact teams and technicians from COSCOM assets. The general support technicians can offer valuable assistance in the inspection and classification of battle damage which results in reduced repair time. By using this expertise the maintenance effectiveness of the division can be greatly increased.

During the preparation and planning phases prior to any combat operation, one of the most important actions that can be taken by all units concerned is an aggressive command-emphasized preventive maintenance and technical assistance program. Although the tangible results cannot be accurately quantified, a well-managed preventive maintenance program is an invaluable tool for all commanders.[10]

In wide frontage defensive operations the entire maintenance workload may have to be evaluated and changed because of the increased demands on equipment to accommodate the mission. There are basically two approaches that can be taken in adjusting the maintenance workload. They are: procedural modifications, or by augmentation,[11] as was discussed earlier. Procedural changes can be effected from within the division without higher headquarters authority; however, when maintenance emphasis

is placed on a few selected functional areas of maintenance operations, the overall maintenance capability of the division is degraded. The modification method should only be used on a temporary basis.[12]

The functions of recovery and evacuation are critical during defensive operations and increased workloads in these areas can be expected.[13] Normally, recovery and evacuation assets are limited under the best of conditions. During wide frontage operations, all available recovery and evacuation assets will be 100% committed and every effort should be made to improvise with other vehicles from within existing divisional resources for these purposes. If the tactical situation becomes critical, the normal policy of recovery and evacuation may be changed to destroy equipment rather than run the risk of possible use by the enemy.[14] Reaction time will also become critical because of the increased dimensions of the defensive battlefield. Recovery and evacuation assets will, out of necessity, have to be located far forward in the brigade areas to be responsive to requirements of the combat battalions.

A liberal direct exchange program of recoverable and reparable items will also serve to enhance the maintenance posture of the division during wide frontage operations. Direct exchange programs are normally limited to the exchange of repair parts, modules, components and assemblies.[15] The Division Material Management Center, in conjunction with the COSCOM Materiel Management Center, can adjust, modify, and increase the stockage of selected items on the approved direct exchange lists which in turn will contribute to increasing the combat power of the division.

Maximum use of the operational readiness float (ORF) will also increase the capability of the combat units of the division. Normally,

the operational readiness float cannot be used to increase combat power of a unit for a specific mission; however, the division commander has some latitude in authorizing a loan of ORF equipment during an emergency situation.[16] In a wide frontage defensive operation, all usable ORF vehicles and equipment should be issued to combat units in the forward defensive area that have like equipment awaiting repair, to increase the division's combat mission capability.

Another applied technique which supports and compliments the supply system is cannibalization. The function of cannibalization includes the removal of serviceable or recoverable items from unserviceable equipment and using them or making them available for reissue.[17] During combat operations, cannibalization may become the most responsive source of supply for front line units. Care and judgment must be exercised when performing cannibalization at the unit level to insure that only the parts needed to meet immediate requirements are removed, and then removed by personnel with the requisite skills. The tactical situation may dictate a radical departure from normal cannibalization procedures. If this situation exists, all personnel in the division should be made aware of the revised procedures and trained for this eventuality.

PART FOUR - TRANSPORTATION OPERATIONS

Transportation assets for the support of the division during wide frontage operations will be furnished by the Transportation Motor Transport (TMT) Company of the Supply and Transport Battalion. The TMT Company will operate from the division support area moving supplies and personnel

forward to the brigade trains areas. There are several modes of transportation available to the division to support combat operations. "Mode operations is a collective term used to indicate one or more transport modes (highway, rail, water and air)."[18] This investigation is limited to the highway mode of operation, and the capability of the transportation motor transport company in particular.

The most important transportation concept in tactical operations is throughput distribution. This concept emphasizes the shipment of supplies from origin, as far forward in the combat zone as possible. By using this concept, rehandling and transferring of cargo at intermediate points can be avoided.[19] In the case of the division, throughput distribution assets are furnished by the assets of the COSCOM or COMMZ units. Based on the amount of supplies that can be expected to be consumed during wide frontage operations, throughput of materiel from the corps is absolutely essential to accomplishment of the defensive mission. This is particularly true of ammunition supplies required by combat units operating in the forward defensive area.

The TMT Company has the capability of moving 270 short tons in a single lift with 75% of vehicles available. Considering the dimensions of the wide front area of operations, the distances involved would prohibit the movement of all supplies forward to the brigade trains areas by the TMT Company. Table 5-4 quantifies the forward movement capability of the TMT Company.

The figures reflected in table 5-4 use a vehicle availability percentage of 75%, a two-shift around-the-clock operation, and planning data for hard surface highways. The alteration of any of these factors will result in a degradation of organic transportation capability.

Transportation Motor Transport Company
Dry Cargo Capabilities
(Daily)

Type Vehicle	Vehicle Authorized	75% Availability	Single Lift Capacity S/T	KM/ Day	Total Ton/KM Per Day
2 1/2 ton truck	60	45	180	100	18,000
5 ton tractor w/12 ton trailer	10	7	84	100	8,400
					26,400

Transportation Motor Transport Company
Bulk POL Capabilities
(Daily)

5 ton tractor w/5000-gal trailer	25	19	285	100	28,500
2 1/2 ton truck w/truck & pump units	6	4	8	100	800
					29,300

Table 5-4

(Source TOE 55-84H)

The dry cargo forward movement requirements for a division conducting wide frontage operations is 200 short tons, less classes III bulk and V (see table 5-3). This requirement is based on moving dry cargo supplies forward to all three brigade areas and in the division rear area. Supplies in support of units located in the division support area can be picked up by unit vehicles, thereby permitting the TMT Company to concentrate its assets to forward movement. The daily forward movement requirement for ammunition resupply is 1,092 short tons which would normally be satisfied by unit vehicles of the combat battalions traveling to the corps ammunition supply point to pick up needed class V supplies. Because of the dimensions of the division area of operations in a wide frontage operation, the use of unit vehicles to pick up ammunition is prohibitive. If for some reason the corps could not provide throughput distribution of class V supplies to the brigade trains area and elsewhere in the division rear area, the requirement for distribution of ammunition would exceed the capabilities of organic division transportation assets and supply responsiveness would be lost.

The forward movement requirement to the brigade trains areas and the division rear area for bulk petroleum products is 453 short tons or 45,300 ton/kilometers per day. By using organic storage facilities, i.e., fuel system supply points, throughout the division area of operations, and the petroleum vehicles of the TMT Company, the bulk petroleum requirements for the division can be accommodated from organic resources.

The movement of supplies and personnel are only two of the missions that the TMT Company is required to accomplish. Movement of selected divisional units within the area of operations is another mission for

the TMT Company. The mobility of divisional units is quantified in table 5-5. If the division has to build up supplies using organic transportation assets for the defense and relocate divisional units in addition to the forward movement requirements, the total requirements for transportation to be supported by the TMT Company will be exceeded.

In planning divisional transportation operations in support of wide frontage defensive operations, the requirements for support by the TMT Company and COSCOM assets must be carefully evaluated and priorities established prior to the commencement of tactical operations.

Division Mobility/Percentage

Unit	
HHC - Div	100%
Signal Bn	85%
Brigade, HHC	100%
Cav Sqdn	100%
HHC DISCOM	50%
AG Co	20%
Finance Co	5%
Maint Bn	100%
S&T Bn	90%
Med Bn	100%
Div Avn Co	100%
MP Co	100%
Engr Bn	100%
Div Arty	100%
ADA Bn	100%
Mech Bn	100%
Tank Bn	100%

Table 5-5

(Source Unit TOE's)

CHAPTER 5 FOOTNOTES

[1]Department of the Army Field Manual 61-100, The Division, 1968, p. 7-15.

[2]Ibid., pp. 6-47, 48.

[3]Ibid., p. 6-47.

[4]Department of the Army Field Manual 101-10-1, Initial Draft, Staff Officers' Field Manual, Organizational, Technical, and Logistical Data, Unclassified Data, July 1975, p. 3-75.

[5]Ibid., p. 3-4.

[6]Ibid.

[7]Department of the Army Regulation 310-25, Dictionary of United States Army Terms, 1 June 1972, p. 447.

[8]Department of the Army Vietnam Studies, Logistic Support, LTG Joseph M. Heiser, Jr., 1974, pp. 88-91.

[9]Graham, Erwin, MG, "The Emerging Logistics System," Army Logistician, September-October 1975, pp. 2-6.

[10]Department of the Army Field Manual 29-30-1, Division Maintenance Battalion, February 1976, p. 10-1.

[11]Ibid., p. 7-4.

[12]Ibid., p. 7-5.

[13]Ibid., p. 8-5.

[14]Ibid., pp. 9-3 through 9-8.

[15]Ibid., p. 6-3.

[16]Department of the Army Regulation 710-2, Materiel Management for Using Units, Support Units and Installations, 1971, p. 3-64.

[17]FM 29-30-1, p. 6-5.

[18]Department of the Army Field Manual 55-1, Army Transportation Services in a Theater of Operations, September 1971, p. 1-2.

[19]Ibid.

Chapter 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

PART ONE - SUMMARY

The purpose of this thesis was to review, evaluate, draw conclusions, and present recommendations pertaining to the effectiveness of current combat service support doctrine in wide frontage defensive operations.

The questions to be answered were:

1. Does sufficient doctrinal guidance exist for the division support command commander to employ his forces during wide frontage operations?

2. What combat service support concepts should be used during wide frontage operations?

3. What are some of the shortfalls and/or limitations of the Army's current divisional combat service support doctrine/organizations?

This investigation addressed selected key functional areas and units under the control of the division support command commander. These areas include: Supply (with emphasis on classes I, III and V); field services; maintenance support services (recovery and evacuation, classification, repair parts supply and equipment repair); and transportation to include highway movement operations.

The methodology used herein is a combination of the historical and design oriented methods. An in-depth review was conducted of

historical data and current published doctrinal literature pertaining to the mechanized infantry division combat service support. The content of the review included the CSS functions performed in selected functional areas; a brief overview of the current organization; how the DISCOM units responsible for providing this support are disposed for combat on the battlefield; and the current operating concepts that depict how logistics operations within a specific functional area are conducted. The design oriented portion of this investigation contained information about the area of operations model. The model was designed to provide a vehicle that would permit an analysis of the current doctrinal guidance contained in Army publications against a realistic geographical area of operations. The dimensions used in the model are based on a contrived threat posed against a U.S. mechanized infantry division, similar to the scenario oriented recurring evaluation system model of Europe (SCORES).

In Chapter 5, a comparative analysis was made using portions of existing doctrine that complements and supports wide frontage defensive operations and innovative logistics concepts that must be used to insure mission accomplishment. The perceived area of operations was described and distances identified that would impact on combat service support operations. The functional areas of supply and services, maintenance, and transportation were examined in detail, workloads quantified, limitations and shortcomings identified, and the disposition and functions of CSS forces throughout the division were explained.

PART TWO - CONCLUSIONS

The review of existing doctrine pertaining to the supply and transport and maintenance battalions, the overall employment data and the combat service support (CSS) concepts concerning defensive operations revealed doctrinal deficiencies.

The logistics concepts contained in Army publications in support of defensive operations are too general and vague in their intended application. Concepts must be defined in detail for all types of tactical operations. Consideration should be given to using pre-stock points forward in the division area of operations for classes I, III and V supplies. Maintenance operations to include recovery, evacuation, classification, cannibalization, and repair must be geared to function in the forward defensive area. Maintenance technicians of the division and corps must be prepared to accomplish their tasks forward in the division area of operations. The units served must also be aware of the maintenance technicians' capability. Contract services can greatly increase the division's capability in all functional areas of logistics. The types of services that would provide this augmentation should be doctrinally identified, quantified, and incorporated into division plans and standing operating procedures. The use of the throughput distribution concept must be mandatory in defensive operations, to move supplies not only to the division support area but forward to the brigade areas in the cases of classes I, III and V supplies, and the supply and service company organization should be changed to provide necessary personnel and equipment to handle class V supplies. Througnput distribution is the most critical logistic concept to be considered in conducting a wide frontage defensive operation.

The dimensions of the wide front defensive battlefield have an adverse effect on timely resupply and reduces the flexibility of the CSS units involved. These conditions and their impact on defensive operations are not contained in current doctrine. The advantages and disadvantages of time/distance must be recognized, identified and quantified. The impact of trade-offs must be carefully considered by the planner and the operating personnel, and great care given to any modification of the existing system.

More specific doctrinal guidance is required in the area of transportation asset management at the division level. The requirements for support from outside the division must be identified and quantified for each type of combat operation. The establishment of priorities must be addressed and the possible impacts defined.

In summary, CSS doctrine designed for conventional defensive tactics is invalid in a wide frontage defense situation on the modern battlefield.

PART THREE - RECOMMENDATIONS

The conclusions reached as a result of this investigation suggest that changes be made to our current doctrinal base. In general terms, CSS doctrine and in particular Army publications, should not only accommodate the basics or operations under normal circumstances, but should include the detailed considerations as to the concepts to be used to support a particular type of combat. Service schools at the officer basic, advanced and upper management level colleges should incorporate the importance and trade-offs of the CSS concepts into their programs of

instruction and identify the impact on tactical operations, and develop training programs accordingly.

During this investigation additional functional CSS areas and some specific problems were identified that require additional study. Further research is required in the following areas to assess current doctrine for the conduct of wide frontage defensive operations:

1. Divisional medical support.

2. Divisional personnel services (finance and personnel).

3. Logistic aircraft assets required to support Army divisions in combat operations.

4. An analysis should be made to determine the weight vs. cube requirements for all classes of supply used by Army divisions in all types of combat operations; and compare the requirements with the vehicle capabilities authorized by current TOE's, dimensions of the battlefield and responsiveness required by the tactical commander.

5. Division support command (DISCOM) command and control procedures under combat conditions.

6. Movement control procedures for tactical operations.

7. The ability of the Division Materiel Management Center to provide responsive management information to using units with organic communications equipment.

8. CSS required for support of a corps/division covering force.

APPENDIX A

DEFINITIONS

Cannibalization point	A collection and disassembly area where disposable items are collected, classified, and held for recovery of repair parts for return to the supply system
Corps support command (COSCOM)	That organization assigned to and providing combat service support to a corps
Direct support system (DSS)	A concept designed to keep fast-moving items of supply where they are needed, shorten supply pipelines, provide asset visibility, reduce materiel inventories, and improve materiel readiness. Containerized items are shipped to supply support activities directly from a CONUS distributing depot, bypassing the overseas storage facilities
Distribution	That functional phase of military logistics that embraces the act of transporting and dispensing materiel, facilities, and services
Direct exchange (DX)	A supply method of issuing serviceable materiel in exchange for unserviceable materiel on an item-for-item basis. It is accomplished without the normal property accountability documents and with a minimum of paper work
Direct support (DS)	Direct support is the process whereby a combat service support unit furnishes a user with supplies and/or services
Division support command (DISCOM)	An organic divisional unit responsible for providing division-level supply, maintenance, transportation, medical, finance, and personnel and administration and miscellaneous services for all assigned and attached elements of the division
Divisional units	Those units that are assigned/attached to a division or to a separate maneuver brigade
General support (GS)	That support which is given to the supported force as a whole
Level of supply	A general term that expresses the quantity of supplies or materiel authorized or directed to be held in anticipation of future demands

Line haul	Characterized by high running time in relation to loading and unloading, line hauls normally one trip or a portion of a trip per day
Lines of communication (LOC)	All the routes (air, land, and water) and installations that connect an operating military force with a base of operations and along which supplies move
Local haul	Characterized by low running time in relation to loading and unloading times. These hauls normally involve a number of trips per day
Main supply route (MSR)	The MSR is a division designated route that is used to move the bulk of the combat service support forward and normally extends forward to the brigade trains area or the brigade rear boundary, whichever is farther forward
Maintenance	All action taken to retain materiel in a serviceable condition or restore it to serviceable condition-- 1. Direct support maintenance. That maintenance normally authorized and performed by designated maintenance activities in direct support of using organizations. 2. General support maintenance. That maintenance authorized and performed by designated table of organization and equipment and table of distribution and allowances organizations in support of the Army supply system
Maintenance float	End items of equipment authorized for stockage at installations or activities to replace unserviceable items of equipment when timely repair of the unserviceable equipment cannot be accomplished by the support maintenance activity
Mode operations	Mode operations is a collective term used to indicate operations of one or more transport modes (highway, rail, water and air) within the theater of operations
Movement capability	Movement capability is the total capability of the shipping and receiving agencies and the transport modes

Movement control	Movement control is the planning, routing, scheduling and control of personnel and supply movements over lines of communication; also an organization responsible for these functions
Reserve stocks	Supplies over and above immediate requirements, such as--

1. Class I--Subsistence

2. Class II--Clothing, individual equipment, tentage, organizational tool sets and tool kits, handtools, administrative and housekeeping supplies, and equipment

3. Class III--POL: petroleum fuels, lubricants, hydraulic and insulating oils, preservatives, liquid and compressed gases, bulk chemical products, coolants, deicing and antifreeze compounds, together with components and additives of such products, and coal

4. Class IV--Construction. Construction materials, to include installed equipment and all fortification/barrier materials

5. Class V--Ammunition. Ammunition of all types (including chemical, biological, radiological, and special weapons), bombs, explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, and other associated items

6. Class VI--Personal demand items (nonmilitary sales items)

7. Class VII--Major end items. A final combination of end products which is ready for its intended use; e.g., launchers, tanks, mobile machine shops, vehicles

8. Class VIII--Medical material, including medical-peculiar repair parts

9. Class IX--Repair parts (less medical-peculiar repair parts). All repair parts and components, to include kits, assemblies, and subassemblies, reparable and nonreparable, required for maintenance support of all equipment

10. Class X--Materiel to support nonmilitary programs; e.g., agricultural and economic development, not included in classes I through IX

Throughput distribution	Term used to describe shipments of supplies from points of origin as far forward as possible, bypassing intermediate supply activities
Unit distribution	That method of distributing supplies in which the receiving unit is issued supplies in its own area, the transportation being furnished by the issuing agency
User	The recipient of supplies and/or services from a direct support combat service support unit

(Source AR 310-25; USACGSC RB 101-2)

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